

Course Outline for COMP1406 B/M (Winter 2016)

Introduction to Computer Science II

A second course in programming for BCS students, emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

Course Information

Instructor Name
Contact Information

Jason Hinek
mjhinek@scs.carleton.ca

Lecture Hours
Mondays and Wednesdays
11:35 – 12:55
Azrieli Theatre, Room 101

Office Hours
Thursdays
12:30 – 2:30
Herzberg Laboratories, Room 5334

Course Website
<https://www.carleton.ca/culearn/>

Course Forum
<https://www.carleton.ca/culearn/>

Required Textbook

There is one (1) **required** textbook for this course:

Spraul, V. A. (2012). Think Like a Programmer.

Assessment Scheme

Your performance in this course is assessed using several components. These include a collection of **mandatory weekly tutorials** (beginning the week of January 11th), **ten (10) assignments**, **three (3) in-class quizzes** (to be announced), and a **final examination** (to be scheduled by the registrar). The grades you achieve on these components will be weighted according to the following scheme.

Tutorials (10 @ 1% each)	10%	Assignments (10 @ 3% each)	30%
Quizzes (best 2 of 3 @ 10% each)	20%	Final Examination	40%

You must pass the combined quiz / final exam mark in order to achieve a passing grade in the course.

Tutorials are mandatory and **attendance is taken** at the beginning of each tutorial. You will receive up to 1.0% of your final grade each time you **attend and participate in the tutorial for the full 1.5 hours**. You must **attend the tutorial in which you are registered** – you will not receive marks if you attend a tutorial other than the one in which you are registered.

Assignments are mandatory. You will use **cuLearn** to submit your assignments and you must ensure that the **marks posted to cuLearn are correct within two weeks** of the date the assignment was graded. Concerns or complaints about the grading of the assignments must be communicated to the teaching assistant within that time – **after two weeks, no assignment remarking is possible**.

Quizzes are 80 minutes long, are **closed-book**, and **only cover material presented since the most recent quiz**.

Learning Outcomes

If a student attends every lecture and completes every assignment and tutorial, then by the end of this course that student should be able to:

- Use **both C++ and Java** to write computer programs (in the **object-oriented paradigm**)
- **Effectively use an editor and a compiler and employ various debugging strategies**
- **Apply different problem-solving heuristics** to solve complex problems
- **Explain** the following topics:
 - **objects, classes, instantiation, encapsulation, data hiding, decoupling**
 - **inheritance and polymorphism**
 - **interfaces and abstraction**
 - **pointers, passing by value, passing by reference**
- **Demonstrate** an understanding of memory management, garbage collection, and a basic memory model

Important Considerations

Assignments submissions are handled electronically, so there is no "grace period" with respect to an assignment deadline – an assignment that is more than a minute late will be rejected and will receive a mark of zero.

Technical problems do not exempt you from this requirement, so if you wait until the last minute and then have issues with your connection, you will still receive a mark of zero. Consequently, you are advised to:

- **periodically upload your progress** (i.e., upload partially completed submissions)
- attempt to **submit your final submission at least 30 minutes in advance** of the due date and time

For each assignment you will be submitting one or more files that contain source code. These files must be compressed into a "zip" file. If you do not compress your source code files or **if you compress your files into another format** (e.g., "rar", "tar", etc.), **then your assignment will be rejected and will receive a mark of zero.**

If any of the source code files you submit does not run it will receive a mark of zero. Consequently, **after you upload your submission** to cuLearn you must **re-download it immediately and ensure that:**

- **your submission is a "zip" file** that is not corrupt (i.e., it can be opened properly)
- **each of your source code files compiles in the standard development environment for this course**
- **each of your source code files can be viewed** in a basic text editor (for marking purposes)

You are expected to **demonstrate good programming practices at all times** (e.g., descriptive variable names, provide comments, etc.) and **your code may be penalized if it is poorly written.** You are also **expected to do the necessary preparatory work** (i.e., devising an algorithm) before you start coding. **You may be asked to present pseudocode or a flowchart before you will receive any assistance** from the instructor or a teaching assistant.

Students with an **illness on the day of a test or tutorial might be granted an exemption** if and only if they provide a **Carleton University Medical Certificate** (http://carleton.ca/registrar/wp-content/uploads/med_cert.pdf) that has been completed and signed by a physician. Because assignment specifications are posted well in advance of their due dates, **illness does not excuse a student from completing an assignment.** In the event of a prolonged illness an exemption might be possible (with the aforementioned medical certificate) but **the instructor must be notified at least 24 hours before the submission deadline.** No **extra credit assignments will be available under any circumstances**, and **no provision is made for missed assignments.**

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable) at <http://www2.carleton.ca/pmc/new-and-current-students/dates-and-deadlines>

Religious Obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Pregnancy Obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to <http://www.carleton.ca/registrar/form>

You must also read: <http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at undergraduate_advisor@scs.carleton.ca. The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

Additional Notes

Including the time spent **attending lectures** and **completing tutorials**, students can expect to spend **at least ten (10) hours per week on this course**. **Students are responsible for all course materials**, including lecture notes, tutorial exercises, and all materials discussed in class and on any of the official discussion boards.

The instructor will **attempt to answer every student email received within three business days** of the time the message was received, **unless the email requests information already posted** on cuLearn or in the course outline.

To ensure that all announcements are received, **students are expected to check their email on a daily basis**.

All materials created for this course (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) **remain the intellectual property of the instructor**. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. **Reposting, reproducing, or redistributing any course materials**, in part or in whole, without the written consent of the instructor, **is strictly prohibited**.

Plagiarism Policy

There is a separate plagiarism policy document for this course that is located on cuLearn under the heading of Course Information. **Students must read this document thoroughly and must agree to adhere to this policy** (and to all policies stated in this course outline).

Students are invited to discuss any concerns with the instructor at the earliest opportunity.